Current Sociology

Internet-Mediated Networking and Academic Dependency in Indonesia, Malaysia, Singapore and the United States

The online version of this article can be found at:

Published by:
⑤SAGE Publications

http://www.sagepublications.com

On behalf of:

International Sociological Association

Additional services and information for *Current Sociology* can be found at:

Email Alerts: http://csi.sagepub.com/cgi/alerts

Subscriptions: http://csi.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations (this article cites 27 articles hosted on the
SAGE Journals Online and HighWire Press platforms):
http://csi.sagepub.com/cgi/content/abstract/54/1/41#BIBL
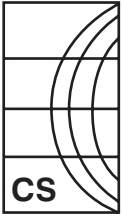
Internet-Mediated Networking and Academic Dependency in Indonesia, Malaysia, Singapore and the United States

Eric C. Thompson

National University of Singapore

abstract: Academic networks, sometimes described as 'invisible colleges', are known to be important in the production and dissemination of scholarship and knowledge. This article examines the shape of international academic networking via email in the field of Southeast Asian studies. Evidence from a survey of academic Internet users in Indonesia, Malaysia, Singapore and the US shows an empirical correspondence to the centre–periphery framework of academic dependency proposed by Syed Farid Alatas and others. At the same time, the results suggest the need for a more fine-grained, institutional-level analysis of these networks. The effects of Internet access and communications also highlight the question of whether this medium promotes broader participation in scholarship or entrenches relationships of academic dependency.

keywords: academic dependency ✦ Internet ✦ Southeast Asia

Introduction

Syed Farid Alatas (2003) has argued that in international social science scholarship an academic division of labour exists between those who produce ideas and theory, on the one hand, and those who engage primarily in empirical work, on the other.[1] He describes global academia as characterized by a 'centre–periphery continuum or structure of academic dependency', particularly in – but not limited to – the social sciences and humanities (Alatas, 2003: 610, fn. 5). Scholars based in what Alatas calls the 'social science powers' – particularly the US, UK and France – are disproportionately represented in the production of new knowledge and theory building, while scholars in 'semi-peripheral' countries (e.g. Japan, Germany, Australia) and academically 'peripheral' nations (especially in the Third World) are less visible in international

41

scholarship and tend to be confined to doing work that is empirical rather than theoretical and that is focused on their own countries rather than comparative.

In this article, I draw on evidence from a survey of academics in four countries to examine patterns of professional communication.[2] While Alatas's empirical claims are built mainly on an examination of academic publishing in leading social science journals (Alatas, 2003: 607–8), the survey of 574 academic staff at universities and research institutes shows a pattern that closely mirrors Alatas's characterization of the global system of academia. The focus of this study is on the field of 'Southeast Asian studies', which includes social science and humanities research done primarily in the region now encompassed by the 10 countries in the Association of Southeast Asian Nations (ASEAN).[3] While the findings of the survey generally support and expand on Alatas's previous arguments, they also suggest the need for a more fine-grained analysis of the global system of academia. Like Alatas's, my primary level of analysis is national and international. Yet some results that allow for comparisons within the national frame show significant disparities at regional and institutional levels. The central and peripheral nodes within the academic system are not only national (though this should not be discounted) but also institutional. I also argue that in some cases – such as that of Singapore – certain sites can be 'peripheral' or 'semi-peripheral' globally, but central in situated regional contexts.

Networking, ICT and Scholarly Communication

'Invisible colleges' play a crucial role in the production of scholarly knowledge (Cohen, 1996; Cronin, 1982; Garvey, 1979; Gresham, 1994; Kraut et al., 1990; Price and Beaver, 1966; Robbin, 1992; Ruth and Gouet, 1993). The concept of invisible colleges denotes informal networks of academics whose interactions generate scholarship that shapes their particular area of research. Much attention has been paid to the possible impact of new information technologies, particularly the Internet, on the scope of invisible colleges. Early analysis of scholarly Internet communication suggested that Internet forums, such as 'electronic conferences', list-serves and email more generally would break down barriers to entry into invisible colleges and broaden the scope of participation within them (e.g. Gresham, 1994).

The most recent research on this rapidly maturing communication technology offers a more complex picture. Physical proximity and face-to-face interaction remain important determinants to the intensity of communication among scholars and development of collaborative interactions (Koku et al., 2001). Likewise, while email may displace older

42

communication technologies such as postal mail and telephone to some degree, online communication appears to supplement rather than wholly displace other forms of interaction (Koku et al., 2001; Wellman, 2001). Nevertheless, the ease of communication via the Internet, and email in particular, plays a vital role in the maintenance of professional ties among geographically remote scholars (Koku et al., 2001: 1754–5; Gresham, 1994: 44).

While 'invisible colleges', networking and Internet communications play an important role on many scales, even that of an individual academic institution, examining these issues in terms of global academia is of special importance. For a field of study conceptualized as a region of 'area studies', scholars of Southeast Asia have been especially concerned with the geography of production of knowledge about the region (e.g. Baviera et al., 2003; Hirschman et al., 1992; Social Science Research Council, 1999). An ongoing critique of Southeast Asian social science and humanities research is its strong historical ties to European colonial and American Cold War interests. More recently, concerns over issues such as terrorism emanating largely from outside the region continue to shape the focus of research agendas and funding. Capacity building of academic institutions and scholarship within Southeast Asia has been largely shaped over the past century by nationalist agendas (see Alatas, 2003; Kratoska, 2003). Nevertheless, since the 1990s, scholars and academic institutions across the region have increasingly sought to build programmes and networks with an explicitly regional focus (Baviera et al., 2003). In this context, the present study assesses the shape and intensity of international networking, and the extent to which Internet-mediated communications in particular tie scholars within Southeast Asia more strongly to one another or if the networks of 'invisible colleges' among scholars working in and on Southeast Asia are tied to sites primarily outside the region.

Survey: Southeast Asia Specialists and Southeast Asian Academics

The survey collected data from two groups of academics: Southeast Asia specialists in the US and academics in the social sciences and humanities working in Southeast Asia. In order to obtain an adequately high response rate (from a notoriously hard to sample population of overly busy, hard to locate, mobile academics) and avoid possible selection bias associated with an online or email survey, research assistants were employed in each country to carry out the survey in face-to-face interviews (regarding methodology, see Applebee et al., 1997, 2000; Chen et al., 2002; Fricker and Schonlau, 2002; Perry et al., 1998; Smith, 1997). In the US, the survey was conducted at six universities with centres for Southeast Asian studies

(N = 132). Respondents were selected on the basis of their affiliation with these centres. In all other cases, responses were collected based on random samples from official lists of academic and research staff in the social sciences and humanities at leading academic institutions. These included in Singapore the National University of Singapore (NUS, N = 65); in Malaysia the Universiti Malaya (UM, N = 109) and Universiti Kebangsaan Malaysia (UKM, N = 56); and in Indonesia the Universitas Indonesia (UI, N = 58) and Universitas Padjajaran (Unpad, N = 80). In addition, in Indonesia, research assistants collected responses from research staff at two Jakarta-based social science research institutions, Lembaga Ilmu Pengetahuan Indonesia and the Centre for Strategic and International Studies (N = 74). The samples from the latter two institutions, like those from the American universities, were treated as a single sample. Response rates for the various national samples ranged between 74.7 percent (for Singapore) and 86.7 percent (for the US).

The goals of the survey were to assess the subjective experiences of academic Internet users in comparative perspective and to map the networks of academics working on or in Southeast Asia as mediated by information and communication technologies (ICT). The main measure of email communication networks used in this study is based on asking respondents to which of a series of destinations they sent email in the past six months.[4] The goal was to establish a baseline of *minimal* email ties of scholars from each country to other destinations. In the article, discussion of the 'strength' of ties – such as between US-based scholars and particular destinations – is based on this minimal measure of the percentage of respondents who reported sending email to that destination in the six months prior to the survey (see Table 1). Responses were collected between October 2002 and July 2003.

The primary hypothesis I seek to test with these data is whether or not scholarly communication is routed mainly through what Alatas has called the 'social science superpowers'. To what extent do we see a pattern of communication in which academically 'peripheral' scholars communicate differentially with counterparts in the academic 'core'? In Southeast Asia specifically, how do the rates of communication with other countries in the region compare to rates of communication with sites such as North America, Europe, Australia and East Asia? In addition, what are the patterns of communication among US-based scholars of Southeast Asia? Are they communicating as extensively with counterparts in Southeast Asia as they are with colleagues in Europe and elsewhere?

The responses to the survey demonstrate a complex web of academic communication between scholars in different institutions and different countries. In this complex web, it is possible to identify a hierarchy of relatively central and peripheral nodes. The results also indicate a rough

44

Table 1 *Email Destinations by Type of Institution (Internet Users)*

Amer. univ.	Sing. univ.	Msia univ.	Indo. res.	Indo. univ.
N.America (99.2)	N.America (98.5)	Malaysia (95.7)	Indonesia (98.4)	Indonesia (89.4)
*	Singapore (95.4)	**	**	**
SEAsia1 (93.8)	**	SEAsia1 (74.7)	Australia (69.8)	N.America (47.9)
*	Europe (79.7)	*	East Asia (69.8)	SEAsia1 (44.7)
Europe (83.1)	SEAsia1 (76.9)	N.America (66.0)	SEAsia1 (66.7)	East Asia (42.6)
SEAsia3 (82.6)	SEAsia2 (76.9)	Europe (63.0)	^	Europe (42.6)
*	^	SEAsia2 (61.1)	Europe (57.1)	^
SEAsia4 (74.0)	East Asia (72.3)	Singapore (57.4)	SEAsia2 (57.1)	SEAsia2 (35.1)
East Asia (70.0)	Australia (69.2)	**	^	^
^	**	East Asia (46.3)	N.America (49.2)	Australia (30.9)
Thailand (63.8)	Malaysia (47.7)	*	Singapore (46.0)	Singapore (29.8)
Australia (59.2)	Thailand (47.7)	Australia (34.0)	^	^
Singapore (59.2)	^	Indonesia (32.1)	Malaysia (38.1)	Malaysia (24.5)
Indonesia (57.7)	Indonesia (40.0)	Thailand (30.2)	^	*
**	Philippines (36.9)	*	Philippines (27.0)	Philippines (11.7)
Philippines (41.5)	**	Philippines (22.2)	Thailand (23.8)	Thailand (10.6)
Other SEA (40.8)	Other SEA (18.5)	Other SEA (18.5)	Other SEA (19.0)	Other SEA (7.4)
Vietnam (39.2)	Vietnam (13.8)	*	*	**
Malaysia (36.9)		Vietnam (8.0)	Vietnam (6.3)	Vietnam (0.0)

Note: Number in parentheses ( ) = % of respondents who sent email to destination in past six months.
* Significant between group difference ($p < .05$).
** Significant between group difference ($p < .01$).
^ Significant within group difference ($p < .05$).
SEAsia1 = Any Southeast Asian country other than own country.
SEAsia2 = Any Southeast Asian country other than own country and Singapore.
SEAsia3 = Any Southeast Asian country other than country of specialization.
SEAsia4 = Any Southeast Asian country other than country of specialization and Singapore.
Amer. univ. = Sample of Southeast Asian specialists from six American universities ($N = 130$).
Sing. univ. = Respondents from the National University of Singapore ($N = 65$).
Msia. univ. = Respondents from Universiti Malaya and Universiti Kebangsaan Malaysia ($N = 162$).
Indo. res. = Respondents from LIPI and CSIS ($N = 63$).
Indo. univ. = Respondents from Universitas Indonesia and Unpad ($N = 94$).

symmetry between the intensity of networking by scholars in different countries and the place of that country within the centre–periphery hierarchy. Scholars in the more central countries and institutions are more intensively and more broadly involved in Internet and other forms of communication networking. In the specific cases examined here, scholars in the US display the highest frequencies of international communication, followed closely by scholars based in Singapore. The least active group are scholars at Indonesian universities. The overall picture is one in which (at a national level) among the countries and institutions in the survey, the US is a central node in academic communication networks, while Malaysia and Indonesia are on the periphery. Singapore is an intermediate node in the international communication networks, while at the same time being a centre for communication regionally within Southeast Asia.

Differential Use and Access

American and Singaporean academics use email and the Internet generally more intensively than Malaysian or Indonesian academics.[5] The median numbers of reported email messages received on a daily basis by Americans (30) and Singaporeans (25) were substantially higher than for Malaysians (6) and Indonesians (3). Americans and Singaporeans also reported substantially higher frequencies of checking email and web browsing and that email was usually their primary means of communicating with colleagues. In all these respects, Indonesians reported the lowest intensity of use and Malaysian academics fell in between their counterparts in Indonesia, on the one hand, and Singapore and the US, on the other. Internet use was essentially universal among respondents in Singapore (100 percent), the US (98.5 percent) and Malaysia (98.2 percent), but less-than-universal in Indonesia (71.6 percent). Among Internet users, access to the Internet at work and home was also near universal (at work) or substantially higher (at home) among Americans, Singaporeans and Malaysians. Indonesian Internet users reported less than universal access at work (82.5 percent) and relatively less access at home (53.5 percent as compared to 71.0–88.5 percent in other countries).

An important difference among Internet users across countries also arose in questions regarding their subjective experience with the Internet. Broadly speaking, both American and Singaporean academics reported higher degrees of 'information overload' – particularly with regard to email. Indonesian academics, on the other hand, reported greater frustration with regard to information access: that the facilities at their institution were not satisfactory and needed to be improved, that the connection speeds were too slow and that there were often times that they wanted to access the Internet but could not. Nevertheless, Indonesian academics

rated the benefits of the Internet generally *higher* than their counterparts in other countries.

The differences in intensity of use and subjective experience of Internet communication reflect a combination of infrastructural development and investment as well as differences in academic culture and how those cultural differences have played out in the different histories of the introduction of Internet technologies in institutions in different countries (Thompson, 2004; see also Beal, 2003; D'Costa, 2003; Hill and Sen, 1997; Lim, 2003; Thapisa, 1996; Thapisa and Birabwa, 1998). Academic Internet users in Indonesia and other developing nations, for example, clearly see the Internet as a possible means of bridging information and resource gaps (see del Castillo, 1995; McKenzie, 1995; Reid, 1995; Rosenberg, 1998). But these hopes for the Internet are frustrated by a variety of constraints – from bandwidth and speed, to technological knowledge, to inefficient distribution of computer resources (del Castillo, 1995; Thompson, 2004). For most scholars in American and Singaporean institutions, on the other hand, the Internet has become a routine, everyday tool of academic life. Relative to Indonesian academics, those in the US and Singapore take for granted Internet communication and information found on the 'World Wide Web'. In most respects, Malaysian academics fell in between Indonesians, on the one hand, and Americans and Singaporeans, on the other. However, with respect to the value of the Internet, Malaysian academics were among the most sceptical. In this regard, their responses were statistically indistinguishable from those of Singaporean and American academics.

Generalized and Specialized Networking of US-based Scholars

Models based on the survey responses of network ties among Southeast Asian studies specialists based in the US show that they are strongly shaped by the area of interest of the specialists. At a regional level, Indonesia specialists ($N = 36$) and Philippines specialists ($N = 23$) have the strongest ties to island Southeast Asia. Thailand specialists ($N = 27$) have the strongest ties to mainland Southeast Asia (see Figure 1).[6] The next strongest ties among all specialists are with Southeast Asia, outside their particular country of expertise, and with Europe. The strength of these ties is essentially equivalent. The weakest ties, among the different regions for which data were collected, were with East Asia and the subregion (island or mainland) of Southeast Asia outside the specialists' expertise. At a country-level analysis of the data, a similar pattern appears (see Figure 2). Country specialists' ties are strongest with their particular country of interest. In general, this is followed by strongest ties to
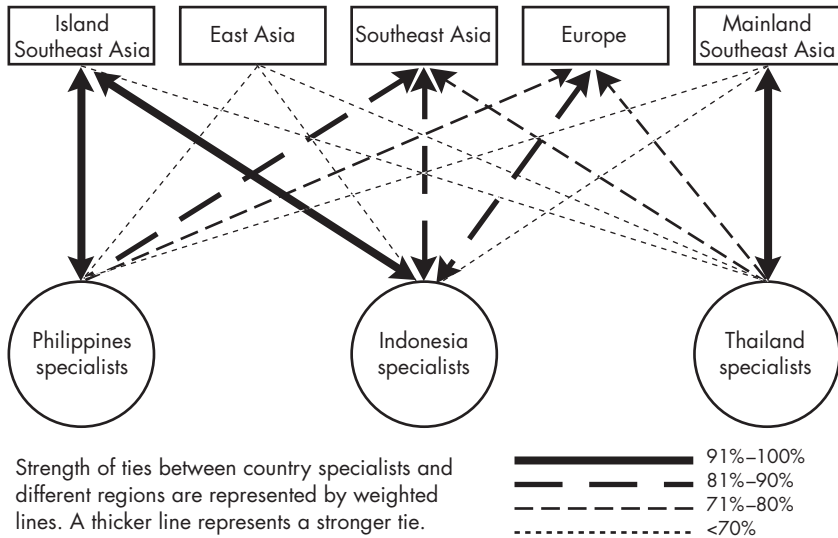
Figure 1 *Model of Southeast Asian Studies Specialist Networking by Region*

Australia and then Singapore. Ties to other countries in Southeast Asia are not insignificant, but are generally weaker than ties to Singapore and even more so to Australia (see also Table 1).

In all cases of both regional-level and country-level networking ties, χ^2 tests of the data show the only significant difference in patterns of communication among specialists were with their own countries of expertise. In other words, Indonesia specialists communicate at a higher level with Indonesia than do Thailand or Philippines specialists. Thailand specialists network at a higher level with Thailand, and so on. In all other cases (save one), country of specialization makes no difference in rates of communication with other countries. For example, scholars of Indonesia, the Philippines and Thailand all communicate at the same (high) levels with Australia and the same (low) levels with Malaysia. The only exception was a significantly higher number of Thailand specialists communicating via email with Vietnam. This exception almost certainly reflects the recent opening up of Vietnam to US-based researchers and the particular interest in Vietnam by Thailand specialists (as the other 'large' country in mainland Southeast Asia as well as historical ties between the US, Thailand and Vietnam dating back to the Vietnam–American war).

This χ^2 analysis supports the argument that specialists are involved in two circuits of networking. It is also reflected more generally in the
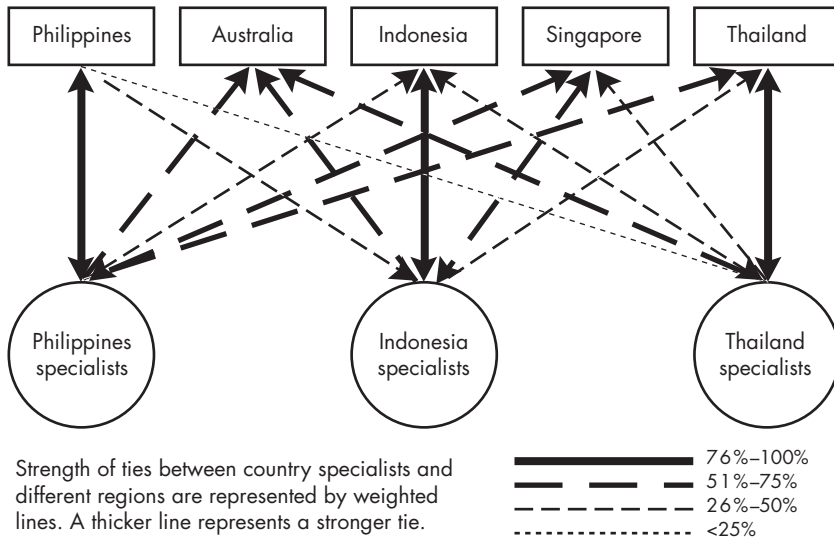
48

Figure 2   *Model of Southeast Asian Studies Specialist Networking by Country*

pattern of communication shown by the sample of US-based scholars as a whole (see Table 1). US-based scholars communicate at high frequency with the countries and subregions that they specialize in. The countries receiving the most email from the US are those with the largest number of specialists, i.e. Thailand and Indonesia. Vietnam and Malaysia, with the least number of experts, receive the least amount of email correspondence. The pattern reflects what I refer to as specialized networking. Undoubtedly, the content of this communication is varied, but the overall trend reflects the quite understandable interest of scholars who do research on specific countries to have professional ties to those countries.

At the same time, they communicate frequently with scholars in other places outside of their area of specialization in what I refer to as generalized networking. It is here that we see an important disparity with regard to linkages to Southeast Asia and to locations outside Southeast Asia. These generalized network ties are strongest with Europe, Australia and Singapore. While the latter two countries have no or very few specialists, the ties of US-based scholars are as strong there as to the countries in Southeast Asia (excluding Singapore) that have the most specialists. At a regional level, ties to Europe are as strong as to Southeast Asia (outside of specialists' countries of interest) and significantly stronger when Singapore is excluded (i.e. SEAsia4 in Table 1). These results suggest that the

49

'invisible colleges' of Southeast Asian scholarship continue to be consti-
tuted as much if not more outside Southeast Asia as within it.

Networking from the Periphery: Malaysian and Indonesian Academics

The email network patterns for Malaysian and Indonesian academics
show that communications within Southeast Asia, while not insignificant,
are generally less substantial than ties to destinations outside Southeast
Asia. Among these respondents, those from Malaysian universities report
the most substantial ties to other countries within Southeast Asia.
However, while their level of communication with Southeast Asian
countries is higher than with any other country or region, this is largely
accounted for by the very high percentage of respondents sending email
to Singapore. When Singapore is excluded, the strength of the tie to other
countries in Southeast Asia is slightly less than to North America and
Europe (though the levels are statistically indistinguishable). Indonesian
respondents likewise reported email correspondence with destinations
outside Southeast Asia that was as substantial as or more substantial than
correspondence with Southeast Asian countries. But again, excluding
Singapore from Indonesian respondents' correspondence with Southeast
Asia resulted in a substantial drop in the results.

Comparisons of the samples from different institutions within Indone-
sia and Malaysia illustrate internal disparities and point to the signifi-
cance of academic 'centres and peripheries' within as well as between
nations. The difference between Indonesian research institutes and Indo-
nesian universities is perhaps the most striking. The former show levels
of networking on a par with their counterparts at Malaysian universities
(albeit to somewhat different destinations). Respondents from Indonesian
universities reported by far the lowest levels of email networking among
all groups. These disparities are seen in comparisons of universities in
Malaysia and Indonesia as well. The more central universities based in
national capitals have more substantial ties than those based outside
major cities.

Respondents from UI, located on the outskirts of Jakarta, were much
more likely to be Internet users (86.2 percent) than respondents at Unpad
(55.0 percent), which is located in the provincial town of Bandung. Among
Internet users at the two institutions, more respondents at UI had Internet
access at work (87.8 percent) and at home (82.0 percent) than those at
Unpad (63.6 percent and 38.6 percent respectively). Internet users at UI
also reported a higher number of email messages received daily (median
of 5.5 per day, as compared to 2 per day at Unpad). With regard to
networking, a higher percentage of UI respondents reported sending

email to every country and region considered in the survey. In the case of email sent to Southeast Asia as a region, the difference was statistically significant at $p < .01$ ($\chi^2 = 7.667$; $p = .006$) and for Europe at $p < .05$ ($\chi^2 = 3.9$; $p = .048$). In all other cases, the difference between the two institutions was not statistically significant ($p < .05$), however the overall trend strongly suggests that respondents at UI are more involved in international networking via the Internet than at Unpad. Only with regard to sending email within Indonesia were the two institutions comparable within a couple of percentage points (88.0 percent for UI and 90.9 percent for Unpad).

A similar, though less dramatic disparity is seen in Malaysia between respondents at UM, based in Kuala Lumpur, and UKM, based in the town of Bangi well outside the Malaysian capital. Use and work access at both universities was near universal (above 95 percent in all cases). However, home access among respondents from UKM (58.9 percent) was significantly lower than for UM respondents (78.1 percent; $\chi^2 = 6.574$, $p = .010$). Significantly larger numbers of respondents from UM also reported sending email to Singapore, the Philippines, East Asia and North America. For all other countries and regions, there was no statistically significant difference between UM and UKM ($p < .05$).

It is clear from these results, especially from Indonesia, that important disparities exist between central and peripheral academic institutions *within* each of the countries. In considering the development of an international system of academic centres and peripheries, attention needs to be paid to the more detailed development of centres and peripheries within individual countries and their linkages internationally (see Altbach, 1977: 189). Moreover, these international linkages need to be examined at both international and *institutional* levels. On the one hand, national politics, economics, wealth, policies and other factors cannot be ignored as they make up an important context within which any institution operates. But institutional disparities within countries (in terms of prestige, for example, in some cases; in terms of facilities such as Internet infrastructure or in terms of general funding in other cases) may be as significant as disparities between countries. The 'social science powers' as conceptualized by Alatas and others are really represented by specific institutions within the countries he cites (i.e. the US, England and France). Other institutions within the same countries may be similarly 'dependent' on 'top tier' institutions in those countries as are institutions in countries on the 'periphery' of the international system of academia. The complexity of the relationships and position of both countries and institutions in the international academic system is highlighted by the somewhat unique position of the National University of Singapore.

The Position of Singapore in Regional Scholarship and Academic Networks

Singapore and specifically the National University of Singapore present an unusual case in terms of academic networking. It is a central node in Southeast Asian regional academia and in links between Southeast Asia and global academia. From the point of view of these networks, Singapore plays a significant role in networking among US-based Southeast Asian studies specialists and among academics in Malaysia and Indonesia. A higher percentage of Indonesian and Malaysian academics reported sending email to Singapore than to any other country in Southeast Asia (see Table 1). Malaysian respondents in particular displayed a stronger tie to Singapore via email than to either East Asia or Australia and nearly as strong a tie as to Europe. In fact, the percentage of Malaysian respondents sending email to Singapore (57.4 percent) was almost as high as the percentage sending email to any other Southeast Asian nation with the exception of Singapore (61.1 percent). Also notable is the fact that ties to Singapore by Indonesian and Malaysian academics are significantly higher than the ties of either country to the other. This is despite the fact that Indonesians and Malaysians use mutually intelligible variants of the same language ('Bahasa') for most instruction and communication, whereas the main language used in Singaporean institutions is English.

For US-based Southeast Asia specialists, Singapore was also a significant destination for email communication. While the number of specialists doing work on Singapore was very small (4 out of 132), the percentage of specialists sending email to Singapore was essentially as high as for the countries with the largest numbers of specialists (i.e. Thailand and Indonesia) and for Australia, indicating that Singapore is a significant node in the 'generalized' communication networks of Southeast Asian specialists. Similarly, the email communication of US-based specialists to destinations in Southeast Asia outside their own country of specialization drops substantially when Singapore is excluded.

While Singapore clearly plays a central role in regional academic networking, characterizing it in terms of global academic networking is rather more difficult. It is possible to see Singapore as a 'semi-peripheral' location within global academia; as a node between the central 'academic powers', such as the US and Britain, and the 'academic periphery' in such places as Indonesia and Malaysia. However, such a model is perhaps too crude to capture the real dynamics of academic networks. We also need to examine a wider range of data and measures of significance than have been captured in analysis to date – for example, journal production examined by Alatas, communication networks such as discussed in this article and, I would suggest, factors such as the training and placement

of masters and doctoral candidates among other things. These factors and their measures need to be critically examined in order to better our understanding of the many modes of 'success' and 'centrality' in global academia.[7]

Finally, Singapore also highlights another aspect of networking in global academia, which the data show to be strongly correlated with Internet-mediated communication: the origins of the scholars and places where they obtained their professional degrees (see Tables 2 and 3). In terms of their countries of origin, the composition of academic staff at NUS is remarkably diverse. All but one of the respondents working in Indonesia and Malaysia were from those respective countries. Even among US-based respondents nearly two-thirds were from the US. By contrast, Singaporeans made up only slightly more than one-quarter of the respondents at NUS. Other NUS respondents hailed from a wide range of countries and regions. This was by no means an anomaly of the survey, but rather reflects the extraordinary diversity of the university's academic staff. On the other hand, far more NUS staff obtained their highest academic degree in North America (64.6 percent) than in any other country or region.

The correlation between the locations where academics from the various types of institutions earned their highest academic degrees and the locations with which they maintain communication networks is striking in the data. For example, the disproportionately high number of degrees earned in Australia and Europe among staff at Indonesian research institutes and the low number earned in North America match their unusually strong email ties to the former locations and unusually weak ties to the latter. Their compatriots at Indonesian universities, on

Table 2   *Origin of Respondents by Country*

| Origin country | Current country | | | |
	Indonesia	Malaysia	Singapore	United States
Indonesia	213 (100%)	0	2 (3.1%)	6 (4.6%)
Malaysia	0	161 (99.4%)	1 (1.5%)	0
Singapore	0	0	17 (26.1%)	1 (0.8%)
Other Southeast Asia	0	0	3 (4.6%)	20 (15.3%)
East Asia	0	0	11 (16.9%)	3 (2.3%)
US	0	1 (0.6%)	13 (20%)	85 (64.9%)
Europe	0	0	8 (12.3%)	11 (8.4%)
Australia	0	0	2 (3.1%)	2 (1.5%)
Other	0	0	8 (12.3%)	3 (2.3%)
Total respondents	213	162	65	131

53

Table 3 *Place of Highest Degree of Respondents by Country/Institution*

	Current institution				
Degree from	Indon. uni.	Indon. res.	Malaysia	Singapore	United States
Indonesia	109 (79.6%)	34 (50.0%)	0	0	0
Malaysia	4 (2.9%)	0	73 (46.2%)	0	0
Singapore	0	0	1 (0.6%)	3 (4.6%)	1 (0.8%)
Other Southeast Asia	1 (0.7%)	0	1 (0.6%)	0	3 (2.3%)
East Asia	1 (0.7%)	3 (4.4%)	2 (1.3%)	0	0
US	12 (8.8%)	4 (5.9%)	36 (22.8%)	42 (64.6%)	120 (90.9%)
Europe	5 (3.6%)	11 (16.2%)	33 (20.9%)	11 (16.9%)	6 (4.5%)
Australia	5 (3.6%)	16 (23.5%)	12 (7.6%)	8 (12.3%)	2 (1.5%)
Other	0	0	0	1 (1.5%)	0
Total respondents	137	68	158	65	132

the other hand, have a low level of foreign degrees, a low level of email communication generally and again their strongest ties (with North America) correspond to where most of their foreign degrees were obtained. In the case of Singapore, an especially strong tie to North America can be observed both in the proportion of academic staff who obtained degrees in North America and even more so in the nearly universal tie among respondents to North America via email.

Digital Divides, Academic Dependency and Participatory Scholarship

The Internet is frequently promoted as a 'borderless' communications technology through which anyone in the world can be connected to anyone else, facilitating the free flow of ideas, information and knowledge across the globe. From the mid-1990s onwards, scholars and policymakers have paid increasing attention to 'digital divides' that limit access and use by class, geography, gender and other social and economic factors (e.g. Castells, 1996, 1998; Chen et al., 2002; Coe, 2003; Ngini et al., 2002; Norris, 2001; Wilson, 1998). Most recent analyses emphasize the great complexity of these digital divides (e.g. Beal, 2003; Strover, 2003; van Dijk and Hacker, 2003; Warschauer, 2003). The inequality signified by the term 'digital divide' is not merely a matter of access or lack of access, or even a matter of quality of access or level of technological skills. Rather, the Internet and other ICT are deeply embedded in the wider 'offline' social, political and economic systems within which its users operate (see DiMaggio et al., 2001; Heeks, 2002; Ho et al., 2003; Patterson and Wilson, 2000; Stolfi and Sussman, 2001). Moreover, the Internet and other

communications technologies themselves provide a platform for emergent communities, power relationships and complex social interactions (see Baron, 2002; Johnson, 1997; Loo and Yeap, 1998; Slevin, 2000; Smith and Kollock, 1999; Rheingold, 1993; Sajjad et al., 2002). Internet-mediated networking in global academic communities constitutes a special case of these wider trends and concerns.

A vexing question is whether expanding Internet access and low-cost email communication enhances participation or entrenches dependency. Email communication was by far the most broadly utilized form of long-distance communication reported in the survey, far outstripping the use of telephone calls, faxes or postal mail. While good historical comparative data are not available, it seems unlikely if email were unavailable that more than two-thirds of US-based scholars of Southeast Asia, for example, would communicate with *every* region considered in the sample and that more than one-third would communicate with *every* country. At the other end of the spectrum, email provides resource-strapped Indonesian academics with a relatively low-cost means of wide regional and global communication. Indonesian academics also clearly value the access to otherwise unobtainable information that the Internet provides.

But access to the Internet alone (or to other forms of networking for that matter) does not necessarily 'level the playing field' for participation in global academia. It could, in theory, even perpetuate or exacerbate the inherent positional inequalities in the system of global academia and scholarly production of knowledge. The operation of systemic dependency and centralized regimes of accumulation is well studied and theorized in more traditional economic systems (e.g. Frank, 1994; Harvey, 1989). Further work needs to be done in the empirical and theoretical study of centre–periphery relationships and accumulation in 'knowledge economies', by which I do not mean traditional economies in which knowledge is now acknowledged as important in accumulating wealth but more specifically an economy of the production and exchange of ideas, concepts, information and the like (see Powell and Snellman, 2004). Global academia is the latter sort of system, with its own rules, regularities, fluctuations and standards of value.

This article has provided evidence of a complex hierarchical relationship among scholars in the social sciences and humanities working on and in the region of Southeast Asia at a national level and secondarily at an institutional level. More research needs to be done to focus on the latter in particular. Most of Southeast Asia, with the exception of Singapore, would be considered on the 'periphery' of the global academic community as described in previous work by Alatas (2003). Singapore would more likely be part of the 'semi-periphery'. Even scholars who *specialize* in working on Southeast Asia communicate as much if not more

with colleagues in other 'central' or 'semi-peripheral' locations in the academic world as they do with colleagues in Southeast Asia. These sorts of patterns of communication, in the 'invisible colleges' generating scholarship about Southeast Asia, are an important factor underlying the more visible outputs of academic production – such as international journal publications (see Alatas, 2003: 606–7).

'Center–periphery' relationships articulate at regional (e.g. Southeast Asia) and intra-national (e.g. between Indonesian institutions) levels. They are correlated with, if not determined by, such factors as the origins and places where scholars working in various countries earned their professional degrees, by the political-economy and basic Internet infrastructure available in different places, and by the reputations of the institutions at which scholars work. Such disparities within global academia may change and shift, but it is hard to imagine that they will ever be eliminated. There is good reason, however, to work towards alleviating these disparities and creating more widely participatory scholarship where possible – for the sake of democratic principles of inclusion and for the added value that different perspectives bring to the development of knowledge, to cite just two reasons. This will require work on two fronts simultaneously. The first will be efforts to extend networks and strengthen ties to and especially *between* countries and institutions now on the periphery of academic discourse. But that alone is not enough if it merely entrenches dependency on training, ideas and other aspects of the global academic pursuit (see Alatas, 2003: 604). At the same time, the academic capacity and stature of 'peripheral' or 'semi-peripheral' academic institutions need to be improved, with the aim to create if not a 'level playing field' then a more broadly multipolar global academic community.[8]

Notes

1. Alatas's critique draws on earlier criticisms of 'academic dependency' particularly among Latin American scholars (Alatas, 2003: 599–604; see also Alatas, 2000; Altbach, 1977; Garreau, 1991).

2. The survey only pertains to professional communication; not non-professional personal networks.

3. The status of Southeast Asia as a legitimate 'region' of investigation has been highly contentious for many decades as is the debate between 'area' and 'disciplinary' studies (see Bates, 1997; Emmerson, 1984; Hirschman et al., 1992; Social Science Research Council, 1999; van Schendel, 2002). Reviewing these debates is beyond the scope of this article. What *is* beyond question is that in the late 20th and early 21st centuries, Southeast Asia is a significant regional frame, both for scholarship and more broadly for social and political interaction, especially in the context of ASEAN (see, for example, Abu Talib and Tan, 2003; Baviera et al., 2003; Hirschman et al., 1992; Social Science Research Council, 1999; Tay et al., 2001).

4. The survey also collected information on phone, fax and postal mail. The present article only addresses these in passing.

5. I use the terms American, etc. to indicate the locations in which scholars work, not their nationality.

6. Indonesia, Philippines and Thailand specialists are used because they are the only groups of specialists large enough for statistical analysis.

7. An interesting example in this regard is the recent survey of the *Times Higher Education Supplement* in which the National University of Singapore ranked as the 10th best university globally in the social sciences. All universities ranked above NUS were located in the US (6) or England (3). The survey was a broad (88-country) international sample of academics. Thus, the results primarily reflect institutional reputation at a global scale. Other methods or measures might produce very different results.

8. Space does not allow a listing of all the significant initiatives underway in various places that aim to do just this. In the case of scholarship in Southeast Asia, for example, foundations such as the Rockefeller Foundation, Ford Foundation, Toyota Foundation and Japan Foundation have engaged in substantial and creative efforts to support Southeast Asian scholarship by Southeast Asians. Numerous initiatives are also underway within the region and particular within the framework of the Association of Southeast Asian Nations (ASEAN), such as the ASEAN University Network, ASEAN University Forum, and development of Southeast Asian Studies programmes at universities in various countries (cf. Baviera et al., 2003).

References

Abu Talib, Ahmad and Tan, Liok Ee (eds) (2003) *New Terrains in Southeast Asian History*. Athens: Ohio University Press/Singapore: Singapore University Press.

Alatas, Syed Farid (2000) 'Academic Dependency in the Social Sciences: Reflections on India and Malaysia', *American Studies International* 38(2): 80–96.

Alatas, Syed Farid (2003) 'Academic Dependency and the Global Division of Labour in the Social Sciences', *Current Sociology* 51(6): 599–613.

Altbach, Philip G. (1977) 'Servitude of the Mind?: Education, Dependency, and Neocolonialism', *Teachers College Record* 79(2): 187–204.

57

Applebee, Andrelyn C., Clayton, Peter and Pascoe, Celina (1997) 'Australian Academic Use of the Internet', *Internet Research: Electronic Networking Applications and Policy* 7(2): 85–94.

Applebee, Ann, Clayton, Peter, Pascoe, Celina and Bruce, Harry (2000) 'Australian Academic Use of the Internet: Implications for University Administrators', *Internet Research: Electronic Networking Applications and Policy* 10(2): 141–9.

Baron, Naomi (2002) 'Who Sets Email Style?', *The Information Society* 18: 403–13.

Bates, Robert H. (1997) 'Area Studies and the Discipline: A Useful Controversy?', *PS: Political Science and Politics* 30(2): 166–9.

Baviera, Aileen S. P., Tadem, Eduardo C. and Malay, Armando S., Jr (2003) *Southeast Asian Studies in Asia: An Assessment*. Quezon City: University of the Philippines Asia Centre.

Beal, Tim (2003) 'The State of Internet Use in Asia', in K. C. Ho, Randolph Kluver and Kenneth C. C. Yang (eds) *Asia.com: Asia Encounters the Internet*, pp. 23–43. London and New York: RoutledgeCurzon.

Castells, Manuel (1996) *The Rise of the Networked Society*. Oxford: Blackwell.

Castells, Manuel (1998) *End of Millennium*. Oxford: Blackwell.

Chen, Wenhong, Boase, Jeffrey and Wellman, Barry (2002) 'The Global Villagers: Comparing Internet Users and Uses around the World', in Barry Wellman and Caroline Haythornthwaite (eds) *The Internet in Everyday Life*, pp. 74–113. Oxford and Malden, MA: Blackwell.

Coe, Neil M. (2003) 'Information Highways and Digital Divides: The Evolving ICT Landscape of Southeast Asia', in Chia Lin Sien and Martin Perry (eds) *Southeast Asia Transformed: A Geography of Change*, pp. 317–53. Singapore: ISEAS (Institute for Southeast Asian Studies).

Cohen, Joel (1996) 'Computer Mediated Communication and Publication Productivity among Faculty', *Internet Research: Electronic Networking Applications and Policy* 6(2/3): 41–63.

Cronin, B. (1982) 'Invisible Colleges and Information Transfer: A Review and Commentary with Particular Reference to the Social Sciences', *Journal of Documentation* 38(5): 212–36.

D'Costa, Anthony P. (2003) 'Catching Up and Falling Behind: Inequality, IT, and the Asian Diaspora', in K. C. Ho, Randolph Kluver and Kenneth C.C. Yang (eds) *Asia.com: Asia Encounters the Internet*, pp. 44–66. London and New York: RoutledgeCurzon.

Del Castillo, Vivian (1995) 'IT in the Philippines: Current State and Prospects for the Future', *Asian Libraries* 4(4): 72–88.

DiMaggio, Paul, Hargittai, Eszter, Neumann, W. Russell and Robbinson, John P. (2001) 'Social Implications of the Internet', *Annual Review of Sociology* 27: 307–36.

Emmerson, Donald K. (1984) ' "Southeast Asia": What's in a Name?', *Journal of Southeast Asian Studies* 15(1): 1–21.

Frank, André Gunder (1994) 'The Development of Underdevelopment', in Rajani Kanth (ed.) *Paradigms in Economic Development: Classic Perspectives, Critiques, and Reflections*, pp. 149–59. Armonk, NY and London: M. E. Sharpe. (Orig. pub. 1966.)

Fricker, Ronald D. and Schonlau, Matthias (2002) 'Advantages and Disadvantages of Internet Research Surveys: Evidence from the Literature', *Field Methods* 14(4): 347–67.

Garreau, Fredrick H. (1991) *The Political Economy of the Social Sciences*. New York: Garland Publishing.

Garvey, W. D. (ed.) (1979) *Communication: The Essence of Science*. New York: Pergamon Press.

Gresham, John L. (1994) 'From Invisible College to Cyberspace College: Computer Conferencing and the Transformation of Informal Scholarly Communication Networks', *Interpersonal Computing and Technology* 2(4): 37–52.

Harvey, David (1989) *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Oxford and Cambridge, MA: Blackwell.

Heeks, Richard (2002) 'Information Systems and Developing Countries: Failure, Success, and Local Improvisations', *The Information Society* 18: 101–12.

Hill, David T. and Sen, Krishna (1997) 'Wiring the *Warung* to Global Gateways: The Internet in Indonesia', *Indonesia* 63: 67–89.

Hirschman, Charles, Keyes, Charles F. and Hutterer, Karl (eds) (1992) *Southeast Asian Studies in the Balance: Reflections from America*. Ann Arbor, MI: The Association for Asian Studies.

Ho, K.C., Kluver, Randolph and Yang, Kenneth C.C. (2003) *Asia.com: Asia Encounters the Internet*. London and New York: RoutledgeCurzon.

Johnson, Steven (1997) *Interface Culture: How Technology Transforms the Way We Create and Communicate*. New York: Basic Books.

Koku, E., Nazer, N. and Wellman, B. (2001) 'Netting Scholars: Online and Offline', *American Behavioral Scientist* 44(10): 1752–74.

Kratoska, Paul (2003) 'Country Histories and the Writing of Southeast Asian History', in Ahmad Abu Talib and Liok Ee Tan (eds) *New Terrains in Southeast Asian History*, pp. 104–22. Athens: Ohio University Press/Singapore: Singapore University Press.

Kraut, R. E., Egido, C. and Galegher, J. (1990) 'Patterns of Contact and Communication in Scientific Research Collaboration', in J. Galegher, R. E. Kraut and C. Egido (eds) *Intellectual Teamwork: Social and Technological Foundations of Cooperative Work*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Lim, Merlyna (2003) 'From Real to Virtual (and Back Again): Civil Society, Public Sphere, and the Internet in Indonesia', in K. C. Ho, Randolph Kluver and Kenneth C. C. Yang (eds) *Asia.com: Asia Encounters the Internet*, pp. 113–28. London and New York: RoutledgeCurzon.

Loo, Eric and Yeap, Soon Beng (1998) 'Cyber-Colonialism in Asia: More Imagined than Real?', *Media Asia* 25(3): 130–7.

McKenzie, Amelia (1995) 'Indonesia on the Internet: The Development of Online Information Sources in Indonesia', *Asian Libraries* 4(4): 36–41.

Ngini, Chukwuma U., Furnell, Steven M. and Ghita, Bogdan V. (2002) 'Assessing the Global Acessibility of the Internet', *Internet Research: Electronic Networking Applications and Policy* 12(4): 329–38.

Norris, Pippa (2001) *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. London and New York: Cambridge University Press.

Patterson, Rubin and Wilson, Ernest J. (2000) 'New IT and Social Inequality: Resetting the Research and Policy Agenda', *The Information Society* 16: 77–86.

Perry, Timothy T., Perry, Leslie Anne and Hosack-Curlin, Karen (1998) 'Internet Use by University Students: An Interdisciplinary Study on Three Campuses', *Internet Research: Electronic Networking Applications and Policy* 8(2): 136–41.

Powell, Walter W. and Snellman, Kaisa (2004) 'The Knowledge Economy', *Annual Review of Sociology* 30: 199–220.

Price, Derek J. de Solla and Beaver, Donald de B. (1966) 'Collaboration in an Invisible College', *American Psychologist* 21: 1011–18.

Reid, Edna O. F. (1995) 'The Internet and Digital Libraries: Implications for Libraries in the ASEAN Region', *Asian Libraries* 4(2): 16–31.

Rheingold, Howard (1993) *The Virtual Community: Homesteading on the Electronic Frontier*. New York: HarperCollins.

Robbin, A. (1992) 'Social Scientists at Work on Electronic Research Networks', *Electronic Networking* 2(2): 6–30.

Rosenberg, Diana (1998) 'IT and University Libraries in Africa', *Internet Research: Electronic Networking Applications and Policy* 8(1): 5–13.

Ruth, S. and Gouet, R. (1993) 'Must Invisible Colleges be Invisible? An Approach to Examining Large Communities of Network Users', *Internet Research* 3(1): 36–53.

Sajjad, Zahir, Dobing, Brian and Hunter, M. Gordon (2002) 'Cross-Cultural Dimensions of Internet Portals', *Internet Research: Electronic Networking Applications and Policy* 12(3): 210–20.

Slevin, James (2000) *The Internet and Society*. Cambridge: Polity Press.

Smith, Christine B. (1997) 'Casting the Net: Surveying an Internet Population', *Journal of Computer Meditated Communication* 3(1).

Smith, Marc A. and Kollock, Peter (eds) (1999) *Communities in Cyberspace*. London and New York: Routledge.

Social Science Research Council (1999) *Weighing the Balance: Southeast Asian Studies Ten Years After*. New York: Social Science Research Council.

Stolfi, Francesco and Sussman, Gerald (2001) 'Telecommunications and Transnationalism: The Polarization of Social Space', *The Information Society* 17: 49–62.

Strover, S. (2003) 'Remapping the Digital Divide', *The Information Society* 19: 275–7.

Tay, Simon S. C., Estanislao, Jesus P. and Seosastro, Hadi (eds) (2001) *Reinventing ASEAN*. Singapore: ISEAS (Institute for Southeast Asian Studies).

Thapisa, A. P. N. (1996) 'The Impact of Global Information on Africa', *Internet Research: Electronic Networking Applications and Policy* 6(1): 71–8.

Thapisa, A. P. N. and Birabwa, Elizabeth (1998) 'Mapping Africa's Initiative at Building an Information and Communications Infrastructure', *Internet Research: Electronic Networking Applications and Policy* 8(1): 49–58.

Thompson, Eric C. (2004) 'Internet Adoption and Use in the Indonesian Academy: Issues of Social and Institutional Hierarchy', *Jurnal Antropologi Indonesia* 28(73): 20–31.

Van Dijk, J. and Hacker, K. (2003) 'The Digital Divide as a Complex and Dynamic Phenomenon', *The Information Society* 19: 315–26.

Van Schendel, Willem (2002) 'Geographies of Knowing, Geographies of Ignorance:

Jumping Scale in Southeast Asia', *Environment and Planning D: Society and Space* 20: 647–68.

Warschauer, M. (2003) 'Dissecting the "Digital Divide": A Case Study in Egypt', *The Information Society* 19: 297–304.

Wellman, Barry (2001) 'Computer Networks as Social Networks', *Science* 293: 2031–4.

Wilson, E. J. (1998) 'Inventing the Global Information Future', *Futures* 30(1): 23–42.

Biographical Note: Eric C. Thompson is assistant professor in the Department of Sociology at the National University of Singapore. He holds a PhD in Sociocultural Anthropology from the University of Washington (Seattle) and has been a postdoctoral fellow in the Center for Southeast Asian Studies at the University of California Los Angeles. His research interests include the social and cultural effects of urbanism in rural Malaysia, cultural identity and subjectivity, and the development of information technology and scholarly networks in Southeast Asia.

Address: Department of Sociology, National University of Singapore, #03–06, 11 Arts Link, Singapore 117570. [email: socect@nus.edu.sg]